

Answers may vary.

Think Safety First Worksheet

Directions: Use this worksheet to record each team's response during the "Think Safety First" game.

1. You are using a microscope to view a wet mount of skin cells.

Accident: Gripped slide too hard + cut finger

Prevention: Handle carefully

3. Your lab station is messy, covered with papers and supplies. You need to heat water on a Bunsen burner.

Accident: Fire hazard

Prevention: Remove clutter + tidy bench before lab

5. While measuring chemicals for a solution, you accidentally spill a large amount.

Accident: Chemical burn or irritation

Prevention: Notify teacher, follow cleanup instructions

7. You are using a Bunsen burner to heat a chemical. You need your notebook, which is on the other side of the flame.

Accident: Possible burn, injury or fire hazard

Prevention: Access notebook safely; do not reach across flame; avoid

clutter

2. You wash your hands, and don't dry them. You pick up a beaker to carry it to your lab station.

Accident: Beaker slips, breaks

Prevention: Dry hands before handling equipment

4. The class before you left a beaker sitting on a hot plate at your lab station. The hot plate is off.

Accident: Could be heat or chemical burn

Prevention: Handle with gloves, assume corrosive, notify teacher

6. You need to measure the mass of a large, heavy rock. You decide to use a spring scale.

Accident: Rock falls/causes injury/damage to spring scale

Prevention: Use appropriate scale; check with teacher if unsure

8. You discover that the test tube you are using has a crack in it.

Accident: Breakage, spillage, cuts, burns

Prevention: Do not use cracked glassware; notify teacher

Dress the Part

Background: There are several pieces of clothing that have been developed specifically for use in the science laboratory. You have probably already used protective goggles, a lab apron, and protective gloves while working in the classroom science lab. In this activity you will identify different pieces of protective equipment, and think of situations in which you should use them.

Directions: Below are three pictures of protective equipment for the science lab. First, write the name of each item, then write a scenario in which you would need that protection.



Name: Safety goggles
When to Wear: Anytime you are working with heat, chemicals, sharp instruments



Name: protective gloves
When to Wear: When working with heat and/or chemicals



Name: lab apron
When to Wear: When working with chemicals

Vocabulary of Lab Equipment Safety

Directions: Unscramble the vocabulary words in the first column. Match the words to the definitions in the second column.

- | | |
|---|--|
| <p><u>f</u> 1. vlicreloep aerwyee <u>protective eyewear</u></p> | <p>a. A tool that is useful for handling hot glassware, particularly beakers.</p> |
| <p><u>g</u> 2. alb onarp <u>lab apron</u></p> | <p>b. A heating device that is often used instead of open flames in the classroom science lab.</p> |
| <p><u>i</u> 3. ierefpvot esvlog <u>protective gloves</u></p> | <p>c. The safety device in the science lab that you would use to rinse your eyes if you got chemicals or dirt in them.</p> |
| <p><u>a</u> 4. keerba glnso <u>beaker</u></p> | <p>d. Guidelines that are important to follow for a safe and fun experience in the science lab.</p> |
| <p><u>h</u> 5. frie etxngreihusi <u>fire extinguisher</u></p> | <p>e. A fragile, expensive piece of equipment used for looking up close at small objects.</p> |
| <p><u>c</u> 6. eswayeh slianot <u>eyewash station</u></p> | <p>f. Science lab safety clothing that protects your eyes.</p> |
| <p><u>j</u> 7. slgaasewr <u>glassware</u></p> | <p>g. Science lab clothing that protects your clothes from chemicals and stains.</p> |
| <p><u>b</u> 8. ont eplta <u>hot plate</u></p> | <p>h. A necessary safety device that is used to put out fires.</p> |
| <p><u>e</u> 9. ocspcieorm <u>microscope</u></p> | <p>i. Safety clothing for the science lab that protects your hands.</p> |
| <p><u>d</u> 10. rseul <u>rules</u></p> | <p>j. Tools such as beakers, test tubes, flasks, and slides, that are made of glass and are fragile.</p> |

Preliminary Assessment

Directions: Fill in the blank with the correct word. A list of possible answers is provided at the bottom of the page.

1. It is easier to prevent an accident than to deal with the consequences.
2. A lab apron will help protect your clothing from chemical spills or stains.
3. You should never eat, drink, or chew gum while you are conducting a science experiment.
4. One of the most common lab accidents is breaking glassware.
5. A thermometer should not be used as a stirring rod.
6. The microscope is one of the most fragile and expensive pieces of school laboratory equipment.
7. Weighing a very heavy object could permanently damage a spring scale by stretching out the spring.
8. You should wear protective goggles when using heat, chemicals, or when cutting something in the science lab.
9. When not in use, a hot plate should be left unplugged.
10. If you get something in your eyes, an eyewash station will enable you to rinse your eyes.

thermometer
goggles
eyewash
eat
prevent

unplugged
microscope
apron
glassware
heavy

Preliminary Assessment

Directions: Decide whether the statement is true (T) or false (F).

11. While people who participate in extreme sports must think about safety all the time, scientists never need to consider it. T F
12. Causing an accident can be annoying, embarrassing, and possibly painful. T F
13. Long, loose hair and lots of dangling jewelry is appropriate science lab attire. T F
14. A messy workspace is safer, and may give you inspiration to do good science work. T F
15. Gloves help protect your hands from harmful substances. T F
16. It is very important to always follow directions. T F
17. Glassware is fragile, so you should be sure to place it away from the edge of the table to prevent it from being knocked over. T F
18. It is best to assume that glassware is never hot, because it does not appear hot. T F
19. It is common sense not to break or deface tools for measuring length, such as rulers. T F
20. Science labs are rarely equipped with fire extinguishers, because fires do not happen in science labs. T F

SAME AS PRELIMINARY ASSESSMENT

Lab Equipment Safety

Name _____

Post Assessment

Directions: Fill in the blank with the correct word. A list of possible answers is provided at the bottom of the page.

1. A _____ should not be used as a stirring rod.
2. When not in use, a hot plate should be left _____.
3. Weighing a very _____ object could permanently damage a spring scale by stretching out the spring.
4. It is easier to _____ an accident than to deal with the consequences.
5. You should wear protective _____ when using heat, chemicals, or when cutting something in the science lab.
6. If you get something in your eyes, an _____ station will enable you to rinse your eyes.
7. A lab _____ will help protect your clothing from chemical spills or stains.
8. One of the most common lab accidents is breaking _____.
9. The _____ is one of the most fragile and expensive pieces of school laboratory equipment.
10. You should never _____, drink, or chew gum while you are conducting a science experiment.

goggles
thermometer
eyewash
eat
prevent

unplugged
microscope
apron
glassware
heavy

Lab Equipment Safety

Name _____

Post Assessment

Directions: Decide whether the statement is true (T) or false (F).

- | | | |
|--|---|---|
| 11. It is very important to always follow directions. | T | F |
| 12. It is common sense not to break or deface tools for measuring length, such as rulers. | T | F |
| 13. It is best to assume that glassware is never hot, because it does not appear hot. | T | F |
| 14. Long, loose hair and lots of dangling jewelry is appropriate science lab attire. | T | F |
| 15. Glassware is fragile, so you should be sure to place it away from the edge of the table to prevent it from being knocked over. | T | F |
| 16. Science labs are rarely equipped with fire extinguishers, because fires do not happen in science labs. | T | F |
| 17. While people who participate in extreme sports must think about safety all the time, scientists never need to consider it. | T | F |
| 18. Gloves help protect your hands from harmful substances. | T | F |
| 19. Causing an accident can be annoying, embarrassing, and possibly painful. | T | F |
| 20. A messy workspace is safer, and may give you inspiration to do good science work. | T | F |

Match the hazard symbol to the hazards.

WHMIS Hazard Class Exercise

Hazard Symbol

Hazards



1) Caustics or acids which can destroy skin or eat metals.



2) Capable of catching fire or exploding in the presence of an ignition sources.



4) Provide oxygen which can increase the risk of fire.



5) Contain harmful microorganisms.



6) Can cause death of a person exposed to small amounts.



7) Can cause immediate skin or eye irritation or long-term health effects.



8) Can explode if exposed to heat or impact.

Lab Safety

When you perform an experiment at home or school, your first priority should be your safety and the safety of those around you. When you experiment at school, ALWAYS follow your teacher's or the book's instructions and NEVER try anything on your own without asking the teacher first.

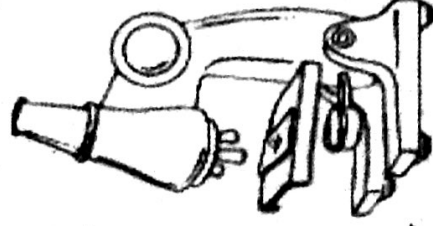
Complete each of the important safety tips below with a word or phrase from the box. Each word or phrase will only be used once.

organized ✓	flame ✓	glassware ✓	wash ✓	cords ✓
long hair ✓	clean up ✓	directions ✓	well-lit ✓	taste ✓
ask questions ✓	teacher ✓	eat or drink ✓	shoes ✓	sharp ✓
safety goggles ✓	broken glass ✓	closed ✓	live plants or animals ✓	spill ✓
plastic gloves ✓	unapproved ✓	safety equipment ✓	heat-resistant gloves ✓	apron ✓
lab materials ✓				

1. Always wash your hands before and after an experiment.
2. Read all directions before beginning the experiment and ask questions if you are unsure of directions.
3. Keep your work area neat and organized.
4. Know the location of safety equipment and how to use it.
5. Always wear safety goggles when working with chemicals, burners, or any substance that may hurt your eyes.
6. Never touch, task, or smell any chemical.
7. Be careful not to spill any materials. If a spill does occur, clean it up immediately.
8. Never reach across a flame.

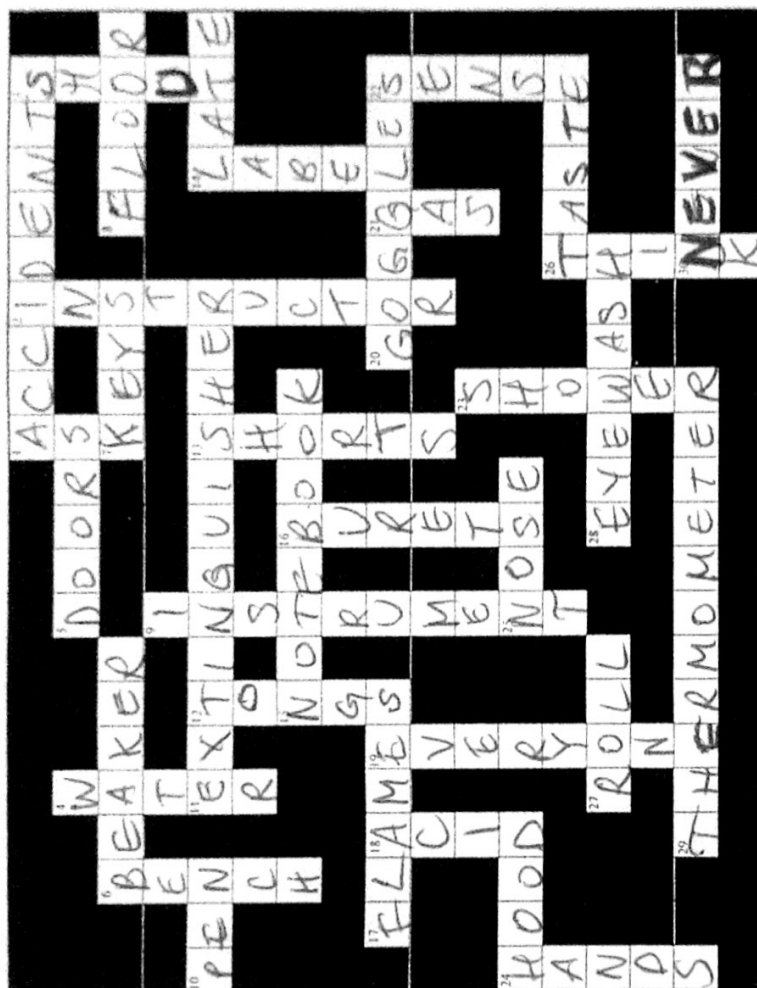


9. Pull back long hair and push up sleeves.
10. Have an adult handle sharp objects such as knives or blades.
11. Always work in a well-lit and well-ventilated area.
12. Never heat liquids in a closed container.
13. Always use the tongs, clamps, or heat-resistant when moving hot containers.



14. Never use broken or chipped glassware.
15. Dispose of broken glass or other sharp objects in the proper container.
16. Notify the teacher immediately if you are cut, burned, or otherwise hurt.
17. Clean up your work area when the experiment is completed.
18. Return all lab materials to their proper location when the experiment is completed.
19. Never perform unsupervised or unsupervised experiments.
20. Wear an apron to protect yourself and your clothes from chemicals.
21. Wear closed-toe shoes when performing experiments.
22. Make sure appliances are working properly and keep cords untangled and out of walking paths.
23. Handle live plants or animals with care and never be cruel or harm living creatures in an experiment.
24. Make sure you know how to use all of the equipment and ask questions if you don't.
25. Wear plastic gloves to protect your hands when handling live animals, plants, or chemicals.
26. Do not eat or drink while completing an experiment.





Chemistry Safety Crossword Clues

Across

1. Report all _____ no matter how small.
5. For safe evacuation from the lab, know the locations of all of these.
6. This is a common piece of laboratory glassware and is a Muppet.
7. Return these to a board after you have locked your drawer.
8. Never leave books or backpacks here.
10. Use this to record all data in your notebook.
11. Use this to put out small fires.
12. Your lab reports should never be this.
13. Record all experimental results in this.
14. These are not permitted in the laboratory when flammable vapors are present.
20. These must be worn at all times in the laboratory.
24. Use the _____ when carrying out chemical reactions that generate flammable or noxious gases.
25. This is one way for a chemical to enter the body.
26. Never _____ a chemical substance in the laboratory.
27. If your clothes catch fire, one of the ways to put out the fire is to: stop, drop and _____.
28. A piece of safety equipment.
29. This piece of equipment is not designed to be used as a stirring rod.
30. _____ return unused chemicals to their original container.

Down

1. What to do when you do not understand something.
2. Report all chemical spills to your _____.
3. The way to attract attention in the event of an accident.
4. If you spill an acid (or base) on your skin, flush the area with this first.
6. Wipe this down before leaving the laboratory.
9. A balance is a type of laboratory _____.
12. Piece of equipment to move hot objects.
14. These should not be worn in the laboratory.
17. Always clearly _____ your solutions.
17. Precise volumetric equipment used in titrations.
18. Always pour _____ into water and not the other way around.
19. People responsible for laboratory safety.
21. Be sure this is turned off at the end of the laboratory period.
22. You will "commonly" bring this with you to every laboratory period.
23. Use this if you spill an acid (or base) on your clothing or major part of your body.
24. Wash these before leaving the laboratory.
26. Always do this while in the laboratory (and during exams as well!)

Adopted and edited from:

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